#INspirEDmath

January 2019, Volume 6

Let's Chat!

Happy second semester! We hope you were able to rest, reflect, and recharge. Did you make a professional resolution? We definitely did. Our goal is to finish and publish phase one of the highly anticipated math framework before the end of January and to complete phase two before the start of the new school year. Phase one of the framework will put our resource guides in an interactive platform allowing for easy access to each standard and its vertical articulation, academic vocabulary, and digital resources. Phase two of the framework will provide educators ELL and Special Education considerations as well as clarifying practical examples for every standard.

We would love to hear your goals! Add your 2019 professional goals to this Padlet. Read through the goals of your peers. You may even find a partner or support system to help you on your journey!

https://www.youtube.com/watch?v=MUhRsfZeSiE

Problem of the Month!

Would You Rather...

Get our students thinking with the problem of the month. Maybe even personalize the problem to the right - Would you rather receive the net revenue from all the parking for an Indianapolis Colts game OR the net revenue from the sale of soda and hot dogs at an Indianapolis Indian's game?

From the basics like addition and subtraction, to proportional reasoning, geometry, probability, and much more, wouldyourathermath.com has got you covered! The opportunities for great discussion, critical thinking, and research are incredibly rich and abundant!

January's Focus: Practice #4

1. Establishing mathematics goals to focus learning
2. Implement tasks that promote reasoning and problem solving
3. Use and connect mathematical representations
4. **Facilitate meaningful discourse**
5. Pose purposeful questions
6. Build procedural fluency from conceptual understanding
7. Support productive struggle in learning mathematics
8. Elicit and use evidence of student thinking

Give Them Something to Talk About

One of the most asked questions we get from educators is, "How do I get my students engaged and talking about math?" Take it from Bonnie Raitt and give them something to talk about! (You can almost hear Bonnie in the background, can't you?) Consider the following two questions:

- How many sides does a triangle have?
- How is a triangle different from other polygons?

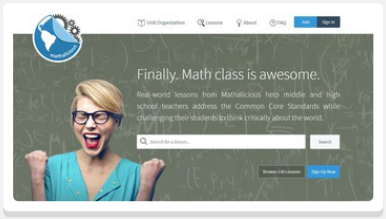
The first question requires no discussion. There is one answer. They have memorized that fact. The second question requires more thought, more connections to prior knowledge, more risk taking in the generation of ideas.

NCTM's fourth recommended teaching practice, facilitating mathematical discourse, has consistently been identified as a high-leverage instructional strategy. According to John Hattie's research, classroom discussion has an effect size of 0.82 (Visible Learning for Mathematics, Hattie, 2017). To put that into perspective, the zone for desired effect of classroom influences starts at 0.40. Essentially, this means that discourse is well above the threshold and will likely result in just over two years of learning in one school year! (To see the list of 252 influences and their effect sizes related to student achievement, click here.)

A small step in promoting mathematical discourse in your own classroom is to open up the questions. Choose the right tasks. Ask yourself two questions when selecting tasks:

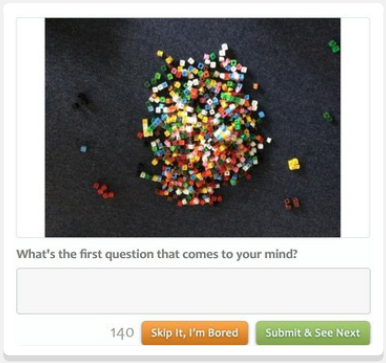
1. Is the task a high-cognitive demand task? Think DOK levels. Does the task simply require the recall of information or the application of a skill or formula? If so, then there may be *nothing to talk about*. When we reach DOK levels 3 and 4 we are asking students to work through non-routine problems, synthesize ideas, critique thinking and explanations, and to develop arguments. All of these, and more, will require students to question their thinking and the thinking of others. Here, there is a lot to talk about!
2. Does the task support the mathematical goal of the lesson? Because we are opening up our tasks, the potential for a scattered conversation arises. Making sure we are setting clear learning goals and aligning our tasks with those, we can assure the point of our lesson is not lost.

Resources We Love!



Mathalicious

The tasks available from mathalicious.com are ideal for promoting conversation among your students! Real-world middle and high school level tasks are designed to challenge students and to promote critical thinking. Tasks comes with plan, teach, and reflect resources, student handouts, exemplar responses, extension opportunities, and lesson guides. Although full access requires a subscription there are lots of FREE lessons!



101 Questions

Search by grade level or key word. Or simply explore them all. You can even become a member and create your own! Get kids talking about what they notice and wonder. Look at questions submitted from across the globe! Click here to choose your first conversation starter!

Yummy Math

Where do we begin? This site provides real-world, thought-provoking, interest-generating, *current*, and varied-interest tasks. The notice and wonder theme is present and the tasks are opened up with questions that don't necessarily have one right answer. Conversations galore are happening! Activities are FREE but with a membership you gain access to editable versions and answer keys.

Sign up for the Math Extravaganza Nearest You!

The math specialists from the Office of School Improvement at the Indiana Department of Education (IDOE) are traveling around the great state of Indiana providing FREE full-day *math-specific* professional development and YOU are invited!

The day will focus on promoting and developing ambitious instruction in the K-12 mathematics classroom using NCTM's *Eight Effective Teaching Practices* as outlined in *Principles To Action* (2014). In the morning, educators will participate in an interactive presentation with the IDOE math specialists to discuss the research, resources, and strategies aligned to each practice. The afternoon session will be dedicated to guided implementation time. Educators will be given the opportunity to apply what they have learned in a safe and collaborative environment. Ideas will be shared and connections made!

Details:

- Five PGP's will be given for educators who attend the full day professional development
- Educators should bring a laptop or other device
- Each site will have the following schedule, with minor variations in time, dependent upon location:
  8:30 a.m. – 2:30 p.m. with a one-hour lunch on your own
- Space is limited to 100 educators at each location - sign up quickly to reserve your seat!

Click here for locations, dates, and registration links.

Opportunities to Get Involved!

ELL and Special Education Teacher Work Groups

DATE: Thursday, January 24, 2019, 8:30 a.m.to 2:30 p.m.
We are looking for ELL and Special Education teachers who work with mathematics teachers and students and who can provide relevant classroom considerations for implementation of the Indiana Academic Standards for K-12 classrooms. These considerations will be a critical part of the mathematics framework. Click here to show your interest in serving on this committee.

K-12 Mathematics Content Expert Work Group

DATE: January 30, 2019, 8:30 a.m.to 2:30 p.m. (K-5)
February 4, 2019, 8:30 a.m.to 2:30 p.m. (High School)
February 6, 2019, 8:30 a.m.to 2:30 p.m. (6-8)
Educators from every grade level and every high school course are needed! The group charge will be to develop supporting examples at each DOK level for each standard. This will be an integral part of the mathematics framework! Click here to show your interest in serving on this committee.

Analytical Algebra II Training

DATE: TBD
Does your school have plans to offer Analytical Algebra II in the 2019-2020 school year? Interested in learning more about the differences between the traditional Algebra II course and this course? Click here to express your interest in joining educators in developing rigorous resources and pedagogical practices that meet the needs of our diverse learners in the course.

Educator Spotlight: Gina Boyd

Gina Boyd teaches a self-contained 4th/5th high ability class at Mayflower Mill Elementary (a Title I school) in the Tippecanoe School Corporation in Lafayette, Indiana. Gina is a National Board Certified Teacher and a leader in elementary economic education. In her twenty-six year career, she has taught every grade from 1st to 8th except for 6th –unless you count the 6th grade math class she has taught to her advanced 5th graders! Originally from Tennessee, she earned her Bachelor's degree from David Lipscomb University in Nashville and her Gifted and Talented license from Purdue University. Gina was the recipient of the national 2016 John Morton Excellence in Teaching of Economics Award and was named a 2011 Golden Apple Teacher by Greater Lafayette Commerce. Gina was awarded the regional Olin W. Davis Award for Exemplary Teaching of Economics in 2009 and

again in 2013, and she has won numerous grants from the Indiana Department of Education, the Public Schools Foundation of Tippecanoe County, the Indiana Council for Economic Education, and the American Institute of Aeronautics and Astronautics.
Gina loves to integrate math and economics, and through her leadership, many teachers at Mayflower Mill use the classroom mini-economy for economic instruction and behavior management. Gina's students learn about entrepreneurship every year by running class businesses that allow students to create, produce, and sell five different products each year. The students produce prototypes, calculate unit costs for production, and learn to calculate profit. As the Elementary School Teacher Advocate for the Purdue Center for Economic Education, Gina has also presented workshops on the mini-economy, classroom business enterprise, and integrating math concepts and economic instruction to other area schools and at conferences. Follow her on Twitter @4th5thGT

ILEARN Mathematics FAQs

The Office of Assessment has provided a document answering all of your questions regarding the ILEARN assessment, test blueprints, item specifications, calculator policies, and much more!

Mathematics Educator Spotlight Nomination

We are always looking for rock-star math educators who are innovative and inspiring. Educators who lead, learn, and collaborate with humility and passion. If you know someone (or are that someone) click the button and nominate them (or yourself)!

Your IDOE Mathematics Team

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